

What is claimed is:

1           1. A light emission apparatus comprising:  
2           a substrate that dissipates heat;  
3           an insulation film that covers a main surface of the  
4 substrate;  
5           a metal wiring pattern provided on the insulation film;  
6           a light emission chip that is mounted above the insulation  
7 film, is connected to the metal wiring pattern, and emits light  
8 having a peak wavelength in a range of 250 nm to 480 nm inclusive;  
9 and  
10          a light reflective layer that is made of particles of metal  
11 oxide and is provided at any place that has the insulation film  
12 thereunder, but not light emitting surface of the light emission  
13 chip thereunder.

1           2. The light emission apparatus of Claim 1, wherein  
2           the particles of metal oxide have an average particle  
3 diameter of 0.50 $\mu$ m or below.

1           3. The light emission apparatus of any one of Claim 1  
2 and Claim 2, wherein  
3           the metal oxide is selected from the group consisting  
4 of Al<sub>2</sub>O<sub>3</sub> and ZnO.

1           4. The light emission apparatus of Claim 1, wherein

2 the light emission chip is made of either a resonant light  
3 emitting diode or a vertical-cavity surface-emitting laser  
4 element.

1 5. The light emission apparatus of Claim 1, wherein  
2 a thread hole and a groove are provided with respect to  
3 the substrate in a position where the light emission chip is  
4 provided in a plan view, the groove being to absorb distortion  
5 which occurs when the substrate expands due to heat.

1 6. The light emission apparatus of Claim 1, further  
2 comprising a covering member that covers the light emission  
3 chip and is made from: a glass substrate; and a phosphor layer  
4 that is provided on a main surface of the glass substrate facing  
5 the light emission chip and that is excited by light emitted  
6 from the light emission chip thereby emitting excitation light.

1 7. The light emission apparatus of Claim 6, wherein  
2 the light emission chip is made to abut against the phosphor  
3 layer.

1 8. The light emission apparatus of Claim 6, wherein  
2 the phosphor layer is made of either: a composition that  
3 emits white excitation light by being excited by the light emitted  
4 from the light emission chip; or a composition that emits such

5 excitation light that, when synthesized with the light from  
6 the light emitting chip, yields white light.

1           9. The light emission apparatus of Claim 6, wherein  
2           the glass substrate of the covering member is fitted into  
3 a metal frame that is fixed to the substrate by means of welding.